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Title: RESTRAINT FOR CHILD SEAT IN SHOPPING TROLLEY ;  
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IPC Classification: B62B3/10 ; B62B5/00 ;

Equivalents:

ABSTRACT:

The restraint 40 is rigid and may be "U"-shaped with the cross-member 42 engaging the rear 36 of the child seat. The restraint 40 may be detachably pivotally connected to the trolley to fold with the seat. The restraint 40 lies within the width of the trolley, and preferably lies within the track (t, fig. 4) of the trolley.

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(56) Documents Cited

GB 2182000 A EP 0375189 A US 4674758 A

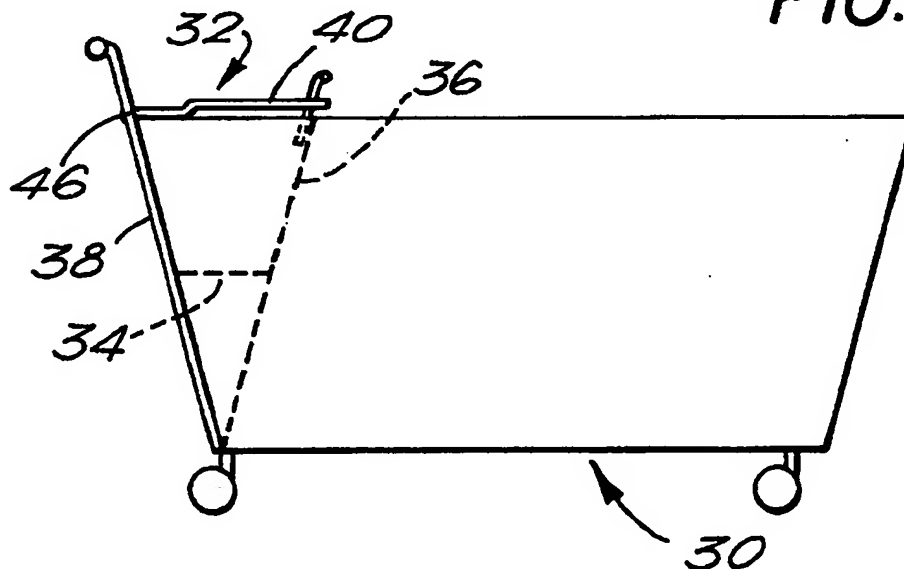
(58) Field of Search

UK CL (Edition M ) A4L LBES , B7B BTX1 BTX2  
INT CL<sup>5</sup> A47D 15/00 , B60N , B62B 3/10 5/00 7/00  
7/12 9/24

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(54) Restraint for child seat in shopping trolley

(57) The restraint 40 is rigid and may be "U"-shaped with the cross-member 42 engaging the rear 36 of the child seat. The restraint 40 may be detachably pivotally connected to the trolley to fold with the seat. The restraint 40 lies within the width of the trolley, and preferably lies within the track (t, Fig. 4) of the trolley.



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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

FIG. 1.

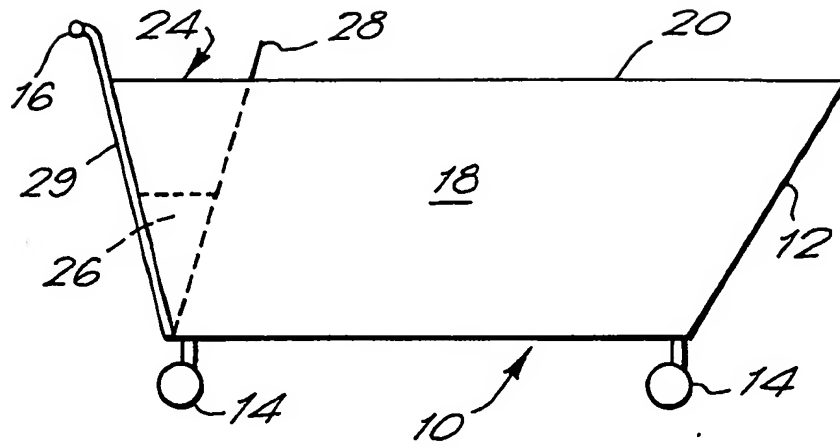
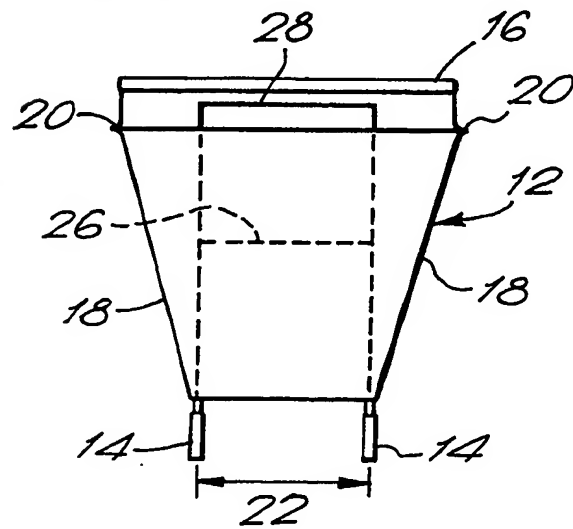


FIG. 2.



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FIG. 3.

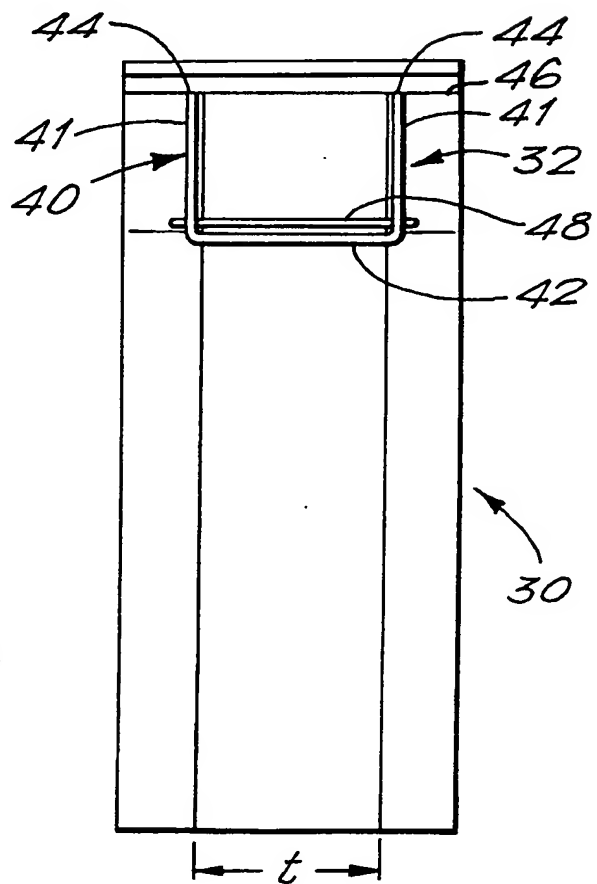
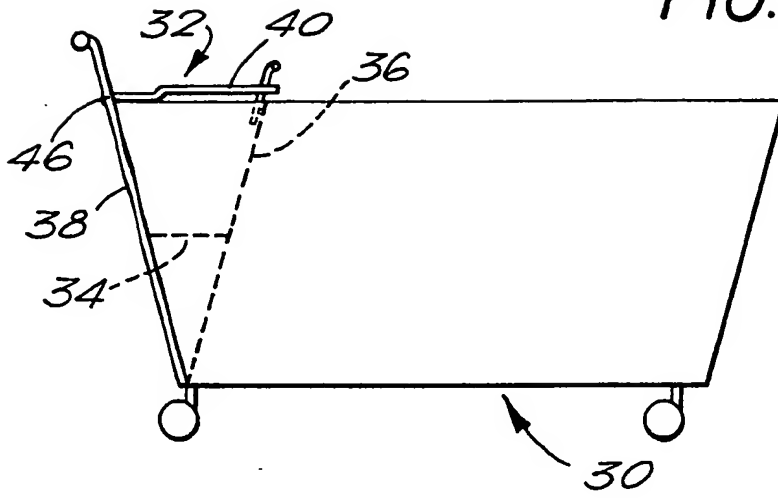


FIG. 4.

FIG. 5.

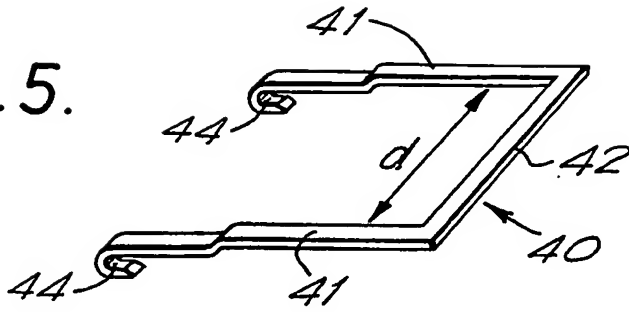


FIG. 6.

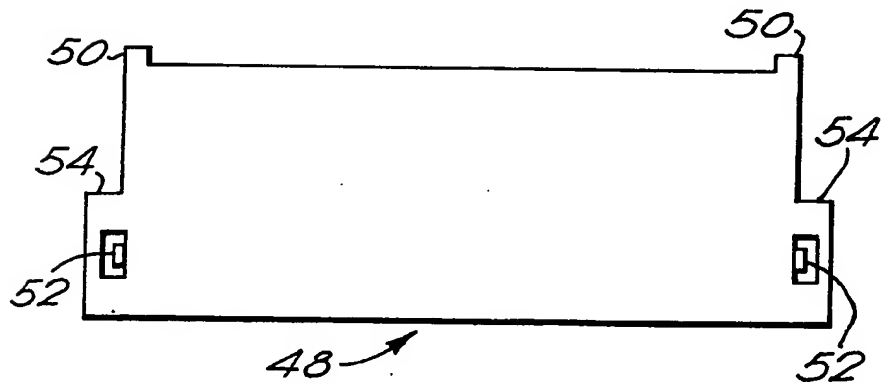
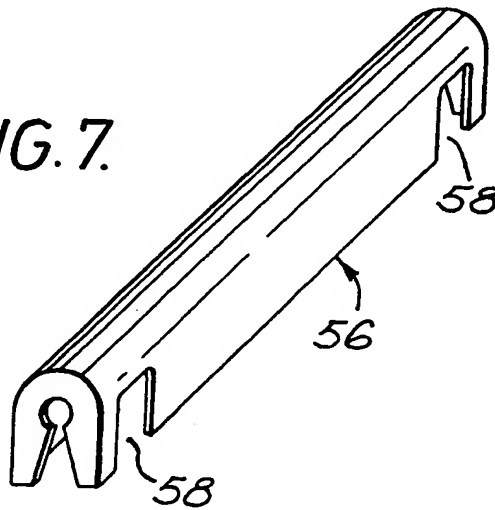


FIG. 7.



A SIDE RESTRAINT FOR A SEAT

This invention relates to a side restraint for a seat and is particularly, though not exclusively, concerned with a side restraint for a child seat for a vehicle such as a shopping trolley.

A conventional shopping trolley 10 as illustrated schematically in elevation and end view in Figures 1 and 2 respectively. The trolley body 12, which is manufactured from welded steel rod, is arranged on four castors 14 (one of which is obscured). A push handle 16 is mounted at the rear of the trolley body 12. It will be noted from Figure 2 that the conventional trolley is relatively narrow at its base and that the sides 18 of the body taper outwardly towards the upper ends and thus the upper edges 20 of the trolley body 12 are outside the track 22 (i.e. the distance between an opposed pair of wheels) of the trolley. It will also be noted that the trolley body 12 is relatively tall in relation to the track 22 of the trolley. Trolleys are designed in this way so as to facilitate movement in relatively narrow aisles in shops such as supermarkets.

A folding child seat 24, suitable for children of about 2 to 5 years is provided at the rear of the trolley and comprises a seat base 26 and seat back 28. The seat base 26 extends across the trolley body and is pivotally mounted on a rear panel 29 of the trolley which is conventionally arranged to pivot upwardly to allow nesting of unused trolleys. When the seat is in the condition shown in Figure 1 ("the in-use

condition"), the seat base 26 is supported by the seat back 28. The seat back 28 is pivotally mounted at its base so that it can be swung towards the rear of the trolley when the child seat is not required (i.e into the non-use condition), the seat base 26 pivoting behind the seat back 28.

It is a well known problem that accidents involving the trolley overturning can occur when a relatively large child seated in the seat moves its weight outside the track of the trolley thus un-balancing the trolley because its centre of gravity is moved outside the track of the trolley. A known solution to this problem comprises fitting a lap restraint in the form of a webbing belt and buckle which prevents the child from moving transversely in the seat. This solution has several disadvantages. First, the belt has to be fitted carefully about the child and the parent may neglect to fit it properly. Second, the webbing gets dirty quickly and is not suited to the conventional method of cleaning shopping trolleys after use, which is with a hose. Third, a child may undo the buckle and free itself from the restraint relatively easily. Although tamper resistant buckles are known, they are inevitably a compromise between prevention of operation by a child and ease of operation by an adult.

It is an object of the present invention to overcome the problems of the conventional seats described above.

A side restraint for a seat for a vehicle such as a shopping

trolley or the like, the side restraint including at least one elongate member extending substantially longitudinally of the vehicle for restraining transverse movement of a child in the seat. Preferably, the side restraint member restrains the child substantially to within the track of the vehicle. The side restraint is preferably arranged to restrain transverse movement of an upper portion of the child's body.

The side restraint may comprise two such elongate members. Preferably, the two such elongate side members are interconnected.

The or each elongate member may be pivotally mounted. Preferably, the or each elongate member is pivotally mounted on a rear surface of the vehicle. In the case of a vehicle such as a shopping trolley formed of welded rod the elongate member may be pivotally mounted on a transversely extending rod. Preferably, the said rod defines an upper edge of the rear panel of the trolley.

The side restraint may be detachably mounted on the vehicle so as to allow retrofitting of conventional vehicle and to allow removal for cleaning or repair. Preferably, the side restraint clips onto the vehicle.

In the case of a shopping trolley having a folding seat comprising a base and rear, the side restraint may be arranged to fold away when the seat is folded into and out of use



condition. Preferably, the or each elongate member is arranged to lie behind the folded seat back when the seat is not in use.

The or each elongate member may be supported in a substantial horizontal position when the seat is in use. The or each elongate member may be supported by a seat back. In the case of a shopping trolley having a relatively narrow seat back, the or each arm may be supported by a member mounted on the seat back. The member may be in the form of a plate.

In a preferred embodiment, the side restraint is produced in a plastics material such as polypropylene which is tough but relatively flexible and is economical and easy to clean.

According to another aspect of the invention there is provided a seat for a shopping trolley or the like including at least one side restraint according to the invention.

According to a further aspect of the invention there is provided a shopping trolley or the like including a seat and side restraint according to the invention.

A shopping trolley including a side restraint in accordance with the invention will now be described, by way of example only, with reference to the further accompanying drawings Figures 3 to 6 in which:

Figure 3 is a side view of a shopping trolley incorporating the

Figure 3 is a side view of a shopping trolley incorporating the seat of the invention;

Figure 4 is a plan view of the trolley shown in Figure 3;

Figure 5 is a perspective view of the side restraint;

Figure 6 is an elevation of a component of the seat; and

Figure 7 is a perspective view of a cover for covering hinged portions of the side restraint in use.

The shopping trolley 30 shown in Figures 3 and 4 is basically the conventional construction described in relation to Figures 1 and 2. The trolley 30 includes a seat 32 which comprises a conventional seat base 34 and seat back 36. The seat base 34 is pivotally mounted on the trolley rear panel 38 in a conventional manner and the seat back 36 is also arranged to pivot rearwardly when the seat 32 is not required as previously described. A seat restraint 40 comprising arms 41 and rear bar 42, which is of unitary construction, is pivotally mounted on the upper edge of rear panel 38 of the trolley body above the seat base 34 so that the arms extend longitudinally of the trolley. Specifically, hinge portions 44, shown especially in Figure 5, clip onto a horizontally extending rod 46 forming the upper edge of rear panel 38. The seat back 36 is narrower than the length of rear bar 42 and a plate 48, shown especially in Figure 6, is detachably mounted on seat back 36 by clips 50,

52. The plate 48 includes shoulders 54 which support the arms 41 of side restraint 40 when the seat 32 is in the in-use condition shown in Figures 3 and 4.

When the seat is moved into the non-use condition (not shown) by moving the seat back 36 rearwardly of the trolley, the side restraint 40 pivots downwardly, about hinge portions 44 to lie behind the seat back 36.

The distance  $d$  between the arms 41 is substantially the same as the track  $t$  of the trolley.

When a child is placed in the seat in the in-use condition, sideways movement of the child is restrained by the arms 41 to substantially within the track  $t$  of the trolley. Thus, the risk of the child moving transversely so as to upset the trolley is mitigated.

The cover 56 shown in Figure 7 can be clipped on to the steel rod 46 to cover the hinge portions of the restraint 40 without restricting its movement. Specifically, arms 41 of the restraint 40 extend through recesses 58 defined by the cover 56. The cover is shaped to facilitate nesting of the trolley with another trolley.

The side restraint described above is conveniently made of plastic, particularly talc-filled polypropylene. Such a construction is advantageous in that it is tough although

relatively resilient, and in that it can be kept clean readily, thus overcoming a disadvantage of the prior art restraint as described above. The construction of the restraint 40, plate 48 and cover 56 allow those components to be retro-fitted to existing trolleys. Alternatively, a side restraint within the scope of the invention can be produced conventionally as an integral part of the trolley. For example, the side restraint may be formed from welded steel rod in the same manner as the remainder of the trolley.

The side restraint of the invention is further advantageous in that it is immediately operational when the seat is placed into the in-use condition. There is no need for further adjustment of the side restraint to fit the child as is required by the prior art lap belt restraint.

CLAIMS

1. A method of restraining a child in a child seat of a shopping trolley or the like vehicle comprising connecting an elongate rigid restraint along one or both of opposite sides of the seat so as to restrain sideways movement of the child.
2. A method as claimed in claim 1 in which the restraint is pivotally connected to the trolley.
3. A method as claimed in claim 2 in which the seat is foldable to a stowed position relative to the trolley and the restraint is foldable with the seat.
4. A method as claimed in any one of the preceding claims in which the restraint is connected to the rear of the trolley.
5. A method as claimed in any one of the preceding claims in which the restraint is detachably connected to the trolley.
6. A method as claimed in any one of the preceding claims in which the restraint cooperates with the back of the seat.
7. A method as claimed in any one of the preceding claims in which the restraint lies within the width of the

trolley.

8. A method as claimed in claim 7 in which the restraint lies within the track of the trolley.
9. A shopping trolley or the like vehicle incorporating a child seat within its width and a restraint to restrain movement of a child in the seat, characterised in that the restraint comprises at least one substantially rigid elongate member that is secured to the trolley and extends along one side of the seat to restrain sideways movement of the child in the seat.
10. A vehicle as claimed in claim 9 in which the restraint comprises two rigid elongate members secured to the trolley and each extending along respective opposite sides of the seat.
11. A vehicle as claimed in claim 9 in which the two rigid elongate members are interconnected by a cross-member.
12. A vehicle as claimed in any one of claims 9 to 11 in which the restraint is pivotally connected to the trolley.
13. A vehicle as claimed in claim 12 in which the seat is foldable to a stowed position relative to the trolley and the restraint is foldable with the seat.

14. A vehicle as claimed in any one of claims 9 to 13 in which the restraint is connected to the rear of the trolley.
15. A vehicle as claimed in any one of claims 9 to 14 in which the restraint is detachably connected to the trolley.
16. A vehicle as claimed in any one of claims 9 to 15 in which the restraint cooperates with the back of the seat.
17. A vehicle as claimed in any one of claims 9 to 16 in which the restraint lies within the width of the trolley.
18. A vehicle as claimed in any one of claims 9 to 17 in which the restraint lies within the track of the trolley.
19. A side restraint for a seat of a vehicle such as a shopping trolley or the like comprising at least one elongate member extending substantially longitudinally of the vehicle for restraining transverse movement of a child in the seat.
20. A restraint for the method claimed in any one of claims 1 to 8.
21. A restraint for the vehicle claimed in any one of claims 9 to 18.
22. A seat in combination with a restraint as claimed in claim 20.

23. A seat in combination with a restraint as claimed in claim 21.

24. A method of restraining a child in a child seat of a shopping trolley or the like vehicle substantially as herein described with reference to the accompanying drawings.

25. A shopping trolley or the like vehicle incorporating a child seat and restraint substantially as herein described with reference to the accompanying drawings.

26. A restraint for a seat of a vehicle such as a shopping trolley or the like substantially as herein described with reference to the accompanying drawings.



**Patents Act 1977****Examiner's report to the Comptroller under Section 17  
(The Search report)**

12

Application number  
GB 9318351.5**Relevant Technical Fields**

- (i) UK Cl (Ed.M) B7B (BTX1, BTX2) A4L (LBES)  
(ii) Int Cl (Ed.5) A47D 15/00 B62B 7/00, 7/12, 5/00, 9/24,  
3/10 B60N

**Databases (see below)**

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii) ONLINE DATABASE: WPI EDOC

Search Examiner  
PAT EVERETTDate of completion of Search  
26 SEPTEMBER 1994Documents considered relevant  
following a search in respect of  
Claims :-  
1 TO 26**Categories of documents**

- X:** Document indicating lack of novelty or of inventive step.      **P:** Document published on or after the declared priority date but before the filing date of the present application.
- Y:** Document indicating lack of inventive step if combined with one or more other documents of the same category.      **E:** Patent document published on or after, but with priority date earlier than, the filing date of the present application.
- A:** Document indicating technological background and/or state of the art.      **&:** Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2182000 A (BONSER) note side members 13, 14	1, 4 to 10, 14 to 23
X	EP 0375189 A (BRITAX) note Figure 1 and abstract	1, 2, 5 to 12, 14 to 23
X	US 4674758 A (VALLEY) note sides of the platform 12	1, 4 to 11, 14 to 23

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).